

## CLAIMS

In the claims:

1. A classification system for generating a classification of target information obtained with a sensor, said classification system comprising:

a grouping subsystem, said grouping subsystem providing for a plurality of classes and a plurality of groups, wherein each said group includes at least one said class, and wherein at least one said group includes more than one said class; and

a selection subsystem, wherein said selection subsystem provides for generating said classification using said target information, wherein said classification is one said group from said plurality of groups.

2. The system of claim 1, wherein said selection subsystem further provides for a prior determination, wherein the generating of said classification by said selection subsystem is influenced by said prior determination.

3. The system of claim 1, wherein said selection subsystem further provides for an event flag, wherein the generating of said classification by said selection subsystem is influenced by said event flag.

4. The system of claim 3, wherein said target information is not used to set said event flag.

5. The system of claim 1, wherein said plurality of groups further includes:  
a first group, said first group comprising a first class; and  
a second group, said second group comprising said first class and a second class.

6. The system of claim 5, wherein said plurality of groups further includes a third group, said third group comprising said first class, said second class, and a third class.

7. The system of claim 1, wherein said plurality of groups and said plurality of classes are predefined before said target information is obtained.

8. The system of claim 1, said selection subsystem further providing for a belief metric, wherein said belief metric influences the classification generated by said selection subsystem.
9. The system of claim 1, said selection subsystem further providing for a plausibility metric, wherein said plausibility metric influences the classification generated by said selection subsystem.
10. The system of claim 1, said selection subsystem further providing for a plurality of probability metrics, wherein each group in said plurality of groups is associated with at least one probability metric from said plurality of probability metrics, and wherein said plurality of probability metrics influences said classification generated by said selection subsystem.
11. The system of claim 1, said selection subsystem further providing for an incoming probability mass and a past probability mass, wherein said incoming probability mass and said past probability mass influence the classification generated by said selection subsystem.
12. The system of claim 1, said selection subsystem further providing for:
- a plurality of incoming probability mass metrics, wherein each said group is associated with at least one said incoming probability mass metric;
  - a plurality of past probability mass metrics, wherein each said group is associated with at least one said past probability mass metric;
  - a plurality of belief metrics, wherein each said group is associated with at least one said belief metric;
  - a plurality of plausibility metrics, wherein each said group is associated with at least one said plausibility metric; and
  - wherein at least one said probability mass metric, at least one past probability mass metric, at least one said belief metric, and at least one said plausibility metric influence the classification generated by said selection subsystem.

13. The system of claim 1, further comprising vehicle information, occupant information, a safety restraint application, and a disablement decision, wherein the target information relates to said occupant information located in said vehicle, wherein said selection subsystem system is configured to make said classification accessible to said safety restraint application, and wherein said classification influences said disablement decision.

14. The system of claim 13, further comprising an event and a reset history flag, wherein said reset history flag is set in accordance with said event, and wherein said selection subsystem generates said classification using said reset history flag.

15. The system of claim 14, further comprising information concerning an opening of a door, wherein said event is said opening of said door.

16. The system of claim 13, wherein said plurality of classes includes an RFIS, a child, and an adult.

17. The system of claim 1, wherein the target information is captured from an image-based sensor.

18. The system of claim 1, further comprising an enhancement subsystem and an enhanced classification, wherein said enhancement subsystem generates said enhanced classification from said classification, and wherein said enhanced classification includes only one said class.

19. The system of claim 18, further comprising a historical attribute, wherein said historical attribute influences said enhanced classification generated by said enhancement subsystem.

20. The system of claim 1, further comprising a belief metric and a plausibility metric, wherein said selection subsystem generates said classification using said belief metric and said plausibility metric.

21. The system of claim 1, said selection subsystem further providing for a belief metric and a plausibility metric, wherein said metrics influence the classification generated by said selection subsystem.
22. A classification system for generating a classification from a plurality of target attributes obtained with a sensor, said classification system comprising:  
a processor, said processor providing for:  
a classification;  
a plurality of historical attributes;  
a plurality of groups;  
a plurality of classes;  
a plurality of belief metrics; and  
a plurality of plausibility metrics;  
wherein each said group includes at least one said class;  
wherein at least one said group includes more than one said class;  
wherein said classification is one group within said plurality of groups; and  
wherein said processor identifies said using at least one said historical attribute, at least one said belief metric, and at least one said plausibility metric.
23. The classification system of claim 22, further comprising an event and a reset history flag, wherein said processor is configured to set said reset history flag in response to said event, wherein said processor deletes at least one said historical attribute upon the setting of said reset history flag to a value of yes.
24. The system of claim 23, further comprising an opening of a door, wherein said event is said opening of said door.
25. The classification system of claim 22, further comprising a disablement decision concerning a safety restraint application, wherein said sensor is said video camera, wherein said plurality of classes includes a child, a RFIS, and an adult, and wherein said classification is configured to be accessed by said safety restraint application in generating said disablement decision.
26. The system of claim 22, wherein said plurality of groups includes:

- a first group, said first group comprising a first class;
- a second group, said second group comprising said first class and a second class;
- a third group, said third group comprising said first class, said second class, and a third class; and
- a fourth group, said fourth group comprising said first class, said second class, said third class, and a fourth class.

27. A method for classifying a target using information obtained from a sensor, said method comprising:

- identifying one group from a plurality of predefined groups as an initial classification by analyzing the target information;
- creating a belief metric relating to the initial classification
- generating a plausibility metric relating to the initial classification and the belief metric; and
- transforming the initial classification into an enhanced classification, wherein the belief metric and the plausibility metric influence the transformation of the initial classification into the enhanced classification.

28. The method of claim 27, further comprising:

- detecting a predefined event;
- storing enhanced classification data in a history cache until the predefined event is detected; and
- clearing the history cache upon the detection of the predefined event.

29. The method of claim 27, further comprising:

- selectively setting an ignorance flag by comparing the plausibility metric to a predefined threshold value; and
- selectively generating an initial classification to a group that comprises all classes upon the setting of the ignorance flag to a value of yes.

30. The method of claim 27, wherein the plurality of groups includes a plurality of classes, wherein each group includes at least one class, wherein at least one group includes at least two classes, and wherein each class is represented in at least one group.

31. The method of claim 30, wherein the group associated with the initial classification includes at least two classes.

32. A method of implementing an occupant classifier for use in a vehicle safety restraint application, comprising:

- defining a disablement situation, a plurality of groups, and a plurality classes, wherein each group is defined to include at least one class, wherein at least one group is defined to include more than one class, and wherein at least one group is defined as the disablement situation;

- implementing a selection heuristic to selectively identify one group within the plurality of groups as the classification, wherein the selection heuristic is configured to be influenced by a plausibility metric and a historical attribute; and

- configuring the vehicle safety restraint application to preclude deployment when the identified group is defined as the disablement situation.

33. The method of claim 32, further comprising:

- providing a processor that is configured to:

- detect a predefined event;

- store updated classification data in a history cache until the predefined event is detected; and

- clear the history cache upon the detection of the predefined event.